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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/809,586	03/15/2001	Brian M. Shirley	303.724US1	3931

7590

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EXAMINER

PHAN, TRONG Q

ART UNIT

PAPER NUMBER

2818

DATE MAILED: 03/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/809,586

Applicant(s)

SHIRLEY ET AL.

Examiner

TRONG PHAN

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 2/9/02 and 2/25/03 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature of the memory cores from two of the different ones of the plurality banks are interleaved in a strip/row with the plurality of shared sense amplifiers as recited in claims 1-56 (It should be noted that: a) Fig. 3 of the present invention shows only a plurality of sense amplifiers being **shared among** with a plurality of memory banks **NOT** two of the different ones of the plurality banks are **interleaved in a strip/row** with the plurality of shared sense amplifiers; b) the interleaving operation may not be shown but the claimed interleaving connective relationship **in a strip/row** of the memory cores and the shared sense amplifiers in a strip/row must be shown; c) the dotted lines newly added in Fig. 3 of the present invention do not show the claimed interleaving connective relationship) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-60 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

It is not understood how the memory cores from two of the different ones of the plurality banks are **interleaved in a strip/row** with the plurality of shared sense amplifiers as recited in claims 1-60. Since: a) Fig. 3 of the present invention shows only a plurality of sense amplifiers being shared among with a plurality of memory banks; b) the interleaving connective relationship of the memory cores and the shared sense amplifiers in **a strip/row** is not shown; c) the dotted lines newly added in Fig. 3 of the present invention do not show such that claimed interleaving connective relationship; d) claim 2 clearly defines that " the strip is arranged in a row and column decode conductors traverse the memory cores in the strip", therefore, the claimed strip/row is clearly associated with the rows/wordlines of the memory cores NOT in the horizontal plane view of Fig. 3 of the present invention. However, the sense amplifiers are always associated with the columns/bitlines of the memory cores as very well known in the art of memory.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-56 are, insofar as understood, rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsawa, 5,970,016, in view of Morton, 5,159,572.

Ohsawa, 5,970,016, discloses in Fig. 1 a DRAM device comprising:
a plurality of memory banks BK0 to BK3 each comprising a plurality of memory core blocks MBLK;
a plurality of shared sense amplifiers SS/A;
a plurality of column decoder CDC;
controller (see lines 33-34, column 6; line 24, column 9; line 37, column 12);
an external processor for this DRAM device must be obviously included as well known in the art.

What is not shown in Fig. 1 of Ohsawa, 5,970,016, is the interleaving connective relationship of the memory cores and the shared sense amplifiers in a strip/row as recited in claims 1-60.

Morton, 5,159,572, discloses in Fig. 3 a DRAM device comprising:
a first memory cell array 26 being interleaved with a second memory cell array 26' in a strip/row/word line interleaved fashion (see lines 36-49, column 4).

It would have been obvious under 35 USC 103(a) to one of ordinary skill in the art at the time of the invention was made to modified Fig. 1 of Ohsawa, 5,970,016, by the teaching as taught in Fig. 3 of Morton, 5,159,572, for the purpose of having an improved reliability and a cheap manufacturing cost (see lines 64-68, column 5 and lines 1-12, column 6 of Morton, 5,159,572).

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Response to Arguments

5. Applicant's response filed on 2/25/03 has been fully reconsidered but it is **NOT** persuasive to place the application in condition for allowance because of the following reasons:

A) The amended Fig. 3 has been entered, however, the dotted lines newly added to Fig. 3 of the present invention still do not show the claimed interleaving connective relationship in a **strip/row**;

B) Regarding the rejection of claims 1-60 under 35 USC 112, first paragraph:

The dotted lines newly added in Fig. 3 of the present invention still do not show the feature of "the memory cores from two of the different ones of the plurality banks are **interleaved in a strip/row** with the plurality of shared sense amplifiers as recited in claims 1-60. Since the dotted lines themselves are seen to be disconnected with each other. They should be called as graphical segments which are usually used to show an enclosed circuit(s) as well known in the art rather than to show any claimed interconnective relationship. Accordingly, the rejection of claims 1-60 under 35 USC 112, first paragraph, is totally proper as set forth above;

C) Regarding the rejection of claims 1-60 under 35 USC 103(a) as being unpatentable over Ohsawa, 5,970,016, in view of Morton, 5,159,572:

Ohsawa, 5,970,016, and Morton, 5,159,572, are both directed to DRAM devices. Morton, 5,159,572, does clearly disclose the teaching of word line interleaved fashion for the purpose of having an improved reliability and a cheap manufacturing cost (see lines 36-40, column 4; lines 64-68, column 5; and lines 8-12, column 6 of Morton, 5,159,572). Thus, modifying Ohsawa, 5,970,016, by Morton, 5,159,572, is totally proper to render claims 1-60 obvious under 35 USC 103(a) as set forth above.

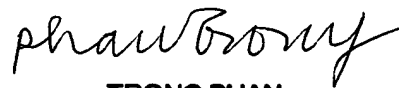
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TRONG PHAN whose telephone number is (703) 308-4870. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (703) 308-4910. The fax phone numbers

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for the organization where this application or proceeding is assigned are (703) 746-4021 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


TRONG PHAN
PRIMARY EXAMINER

March 16, 2003